

United States Department of the Interior
National Park Service

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National Register of Historic Places
Registration Form

FEB 07 1994

NATIONAL

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions on page 2. Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Roxbury Fish Hatchery

other names/site number Roxbury Fish Culture Station

2. Location

street & number Vermont Route 12A N/A not for publication

city or town Roxbury N/A vicinity

state Vermont code VT county Washington code 023 zip code 05675

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant ☐ nationally ☒ statewide ☒ locally. (See continuation sheet for additional comments.)

Signature of certifying official/Title

Date

Vermont State Historic Preservation Office

State of Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of certifying official/Title

Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

- ☒ entered in the National Register. ☐ See continuation sheet.
- ☐ determined eligible for the National Register ☐ See continuation sheet.
- ☐ determined not eligible for the National Register.
- ☐ removed from the National Register.
- ☐ other, (explain:) _____

Signature of the Keeper

Date of Action

Beryl A. Savage

3/24/94

Roxbury Fish Hatchery
Name of Property

Washington, Vermont
County and State

5. Classification

Ownership of Property

(Check as many boxes as apply)

- ☐ private
☐ public-local
☒ public-State
☐ public-Federal

Category of Property

(Check only one box)

- ☐ building(s)
☒ district
☐ site
☐ structure
☐ object

Number of Resources within Property

(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
<u>4</u>	<u>3</u>	buildings
		sites
<u>2</u>	<u>4</u>	structures
		objects
<u>6</u>	<u>7</u>	Total

Name of related multiple property listing

(Enter "N/A" if property is not part of a multiple property listing.)

Number of contributing resources previously listed in the National Register

0

Fish Culture Resources of Vermont

6. Function or Use

Historic Functions

(Enter categories from instructions)

AGRICULTURE / fishing facility

Current Functions

(Enter categories from instructions)

AGRICULTURE / fishing facility

7. Description

Architectural Classification

(Enter categories from instructions)

no style

Materials

(Enter categories from instructions)

foundation Concrete
walls Weatherboard

roof Asphalt
other _____

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Roxbury Fish Hatchery
Name of Property

Washington, Vermont
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ **B** Property is associated with the lives of persons significant in our past.
- ☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

Agriculture

Architecture

Period of Significance

1890 - 1943

Significant Dates

1891

1897

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

unknown

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey

- ☐ recorded by Historic American Engineering
Record # _____

Primary location of additional data:

- ☒ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Name of repository:

Roxbury Fish Hatchery
Name of Property

Washington, Vermont
County and State

10. Geographical Data

Acreage of Property 7.93 acres

UTM References

(Place additional UTM references on a continuation sheet.)

1	18	6	80	6	9	0	4	8	8	1	1	2	0
Zone	Easting			Northing									
2													

3													
Zone	Easting			Northing									
4													

☐ See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Ann Cousins

organization Ann Cousins Associates date September 1, 1993

street & number R.R. #1, Box 437-K telephone (802)-434-5193

city or town Richmond state VT zip code 05477

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name State of Vt. Agency of Natural Resources, Attn. Thomas Wiggins

street & number 103 S. Main St., 10 South telephone (802)-224-7331

city or town Waterbury state VT zip code 05676

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reduction Projects (1024-0018), Washington, DC 20503.

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ROXBURY FISH HATCHERY
Roxbury, Washington County, VT

DESCRIPTION

The Roxbury Fish Culture Station is located two miles south of Roxbury Village, in the town of Roxbury, on a narrow, ten-acre strip of land stretching between the Central Vermont Railroad line and Vermont Route 12A. The fish hatchery, as it is commonly called, was established in 1891 and is the oldest state hatchery in Vermont. Owned by the State of Vermont and managed by the Vermont Department of Fish and Wildlife, all of the station's historic buildings are well preserved and include an 1891 hatchery building, a c. 1894 ice house, an 1897 carriage barn, a 1935 storage barn and c. 1937 stone barbecue, both built by the C.C.C. The historic buildings are arranged in a park-like setting around a linear series of five ponds, the largest of which is lined with conifer trees. The ponds and hatch house are fed by spring and surface water diverted from Flint Brook. To the south of the cluster of historic buildings, a biology lab, added to the site in 1960, and a 1980 storage barn complete the complex. While non-contributing due to age, the biology lab is significant as representing a broader approach to fish culture practice, which, beginning in the 1940s, increasingly studied the prevention and treatment of disease in fish. Because this is the state's first fish hatchery, the buildings, structures, waterways and landscape that make up the Roxbury Fish Culture Station are extremely important historical and architectural resources related to Vermont's architectural and agricultural heritage within the context, "Fish Culture in Vermont, 1850 - 1943." The fish culture station continues to operate, much as it did in 1891, and though technological advancements have made fish propagation more efficient, the historic hatchery retains its integrity of location, design, setting, materials, workmanship, feeling and association.

Understanding the resources at the Roxbury Fish Culture Station includes a brief description of artificial fish propagation. In 1891 fish culture meant procuring, incubating and hatching eggs, rearing the resultant fry, and distributing the offspring to lakes and streams. Key to the operation was an abundant supply of fresh water and access to transportation. While technological advancements have made the process more efficient, the basics are the same today as in 1891. Today, brood stock are kept in the

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Roxbury, Washington County, VT

lower ponds of the Roxbury station (#4). (The youngest fish are kept in the upper ponds, nearest the source of water.) During spawning, eggs and milt are expressed into bowls and left approximately ten minutes to fertilize. The eggs are then rinsed with fresh water and placed in a single layer in plastic hatching trays. The trays are transferred to the hatchery building (#1), where they are placed in vertical racks and incubated with a continuous flow of fresh water to provide adequate oxygen. In the 19th and early 20th century, tall, glass hatching jars were commonplace (a modification of which is still used to hatch wall-eyed pike). Once hatched, the fry are kept in concrete rearing troughs in the hatchery building. Until the mid-20th century, troughs were made of cypress, but as fish culture became more concerned with the prevention of disease, concrete became the material of choice. When the fish reach a fingerling stage (approximately three to four inches long), they are transferred to production ponds in the yard (#4). In the spring, the offspring are stocked in area streams and lakes. Before the advent of the automobile, eggs, fish and fry were transported by rail, or, for shorter distances, by wagon. In 1930, the Department of Fish and Game purchased a fleet of trucks ending the dependency on the railroad. It is interesting that the switch from train to automobile coincided with the railroad lines terminating their policy of free transport. Fry, fingerling and fish were shipped in "fish cans" that looked like large milk cans with a perforated inset for holding ice. As the ice melted, it provided oxygen for the fish. Today, trucks are equipped with large holding tanks, and, with the modern network of roadways, the offspring are quickly transferred. In the 1940s and 1950s, planes were used to stock remote ponds.

Because fish propagation is dependent on an uninterrupted flow of water, a manager, or superintendent, as he was historically called, lived at the site. Built in 1895, the original, 2-1/2 story, ten-roomed superintendent's house sat at the south end of the ponds, facing the hatchery yard. In 1970 the house was demolished due to escalating maintenance costs and the rising expense to heat the building. A residential trailer (#9) replaced the vernacular frame building.

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Before 1957, fish food was produced at the site by grinding meat organs and mixing in grain. The meat was stored in an ice house (#2) that also housed a grinding room and lean-to workshop. In 1957 dry pellet food was introduced, revolutionizing the process. Despite the change, the cold storage facilities, now adapted with a compressor rather than ice blocks, remains intact.

In 1952, state and federal biologists began a study of fish habitat in the various watersheds throughout the state. The study was implemented to better stock species in the most appropriate environment. This program went hand-in-hand with the growing emphasis on fish health. In 1960, the state built a biology lab near the southern boundary of the property. While non-contributing due to age, this building is significant for representing the broadening scope of fish culture.

Critical to artificial fish propagation is an abundant supply of fresh water. The water flowage must be appropriate to carry oxygen to the stock and with enough force to carry waste products away. The water supply at Roxbury is an "open" system, that is, a mixture of ground water and surface water. A large spring house (#5) collects the ground water, which is then mixed with water diverted from Flint Brook. The volume of brook water is controlled at a valve house (#6). The water flows to the series of five ponds (#4), to above ground plastic rearing pools, and to the hatchery building (#1). Inside the hatchery building, the water passes through nitrogen removal tubes before flowing to incubation trays and rearing troughs. As the water leaves the hatch house, it flows to the lower three ponds, a settling basin, and finally feeds into the Third Branch of the White River.

Three criteria influenced locating the first state hatchery at Roxbury: cost, transportation and water quality. The land for the Roxbury hatchery was donated to the state through the generosity of Hon. E. H. Spaulding. The initial appropriation from the state legislature to build and equip the hatchery was \$2,400. The property was located on the Central Vermont Railroad line. To transport fish cans, an earthen loading ramp was built leading to the rail line. When the hatchery was established, there was an abundance of water from numerous springs on the property. In addition, water rights were obtained from E. P., J. K. and E. K.

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Burnham to tap Burnham Brook (now Flint Brook). By 1928 a diminished water flow was recognized. This came about gradually over a period of years and was accounted for, in part, by the clearing of forest growth protecting water sheds. Today, insufficient water capacity continues to haunt the Roxbury Fish Culture Station.

Because this is a working fish culture station, the resource can be viewed in its true environmental context, including smell and sound. Throughout the yard and hatchery, water rushes into ponds, through headers and raceways, into rearing troughs and gently filters over incubation trays. The sounds and smells bring this historic sight to life. The station is open to visitors, and there is a picnic area with two stone barbecues (#7) built by the C.C.C. located on a ledge overlooking the yard.

1. Hatchery Building, 1891 / 1897

Following an appropriation in 1891 by the Vermont State Legislature for \$2,400, the state Fish and Game Commission established the first state-owned hatchery at Roxbury, Vermont, constructing a 28' by 55' hatchery building. That year 1,000 trout to be used as breeders were placed in ponds in front of the hatchery building, and eggs were shipped here for incubation. The first fry plants the following year totaled 553,500 fish, consisting of brook, lake, "loch leven" and rainbow trout, and landlocked salmon. Operations quickly exceeded the capacity of the building so that a 30' addition containing more rearing troughs was completed in 1896. By 1912 the building needed extensive repairs, and the sills and foundation were replaced. During 1910, 1911 and 1912, the state propagated brook, rainbow, lake and brown trout, and landlocked and Chinook salmon. Now, the hatchery mainly raises brook, brown, lake and rainbow trout.

The vernacular, 1891 hatchery building is 1-1/2 stories, 4 x 8 bay, 28' wide by 85' long, with the gable-front facing the yard (north). The southernmost 30' were added to lengthen the trough room in 1897. The northernmost 15' section of the building contains offices with the main entrance, a half-glass, horizontal-paneled door, at the right bay of the facade, balanced by a batten

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door at the left bay. The present doors replace original four-paneled doors, and the left bay entrance was widened, probably in 1938 when the interior was renovated. The facade is protected by a hipped roof, full width, concrete deck porch. When built, the front of the porch formed the wall of an approximately 25' square rearing pool that was part of a series of pools extending approximately 75' north of the building. The elongated hatchery sits on a concrete foundation, has clapboard siding and a gable roof covered with asphalt shingles with standing seam ice flashing at the lower third of the slope. There are four wood ventilators at the ridge above the trough room and a brick chimney at the west slope near the ridge above the office section. Architectural detail includes wide cornerboards rising to a narrow frieze, and plain surrounds with a drip cap framing the regular 6/6, double-hung sash. The exterior of the building is remarkably unchanged.

The interior of the hatchery building has two offices, a storage closet and a bathroom in the front section, and an elongated trough room, or hatch room, below grade (down four steps), stretching behind. The interior represents a series of renovations made to the building in response to changing fish culture technology. When built, the hatchery was equipped with wooden rearing troughs set on a wood floor. In the wet environment, the floors and sills quickly deteriorated, and in 1912, the building was raised out of the ground, placed on new sills, and the decaying floor was replaced by a concrete floor set two feet lower than the original floor to better take advantage of gravity for the water delivery system. This necessitated pouring concrete walls five feet high from the floor to raise the woodwork out of the ground. The concrete half-wall now supports diagonal bracing that was added to reinforce the ceiling. Because the floor was dropped and the walls raised, the base of the windows now begin approximately six feet above the floor, a feature not found in subsequent state hatcheries. The second renovation took place in 1938 when the C.C.C. installed toilets and a new heating system in the hatchery building. By this time the hatchery had probably been electrified. Finally, in 1977, as prevailing fish culture practice suggested that wood troughs can harbor harmful microorganisms, the cypress troughs were replaced with six, paired, concrete troughs, each approximately 3' tall by 7' wide by 20' long. There is a walkway at the ends and on either side of

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Roxbury, Washington County, VT

the paired troughs. The front (north end) of the hatch room holds a rack with twelve columns of hatching trays, and there are additional racks placed in the rearing troughs as needed. The hatching trays and troughs are supplied with a mixture of spring and surface water delivered through a nitrogen removal tube.

2. Ice, Meat and Cook House, c. 1894

By 1894 an ice, meat and cook house, 25 x 30 feet, was added to the complex, and during the biennial term 1896 - 1898, the building was equipped with a gasoline motor with fixtures and cutters for grinding meat. At that time, attendants prepared fish food by grinding meat organs and mixing in grain. It was not until 1957 that dried pellet food was first introduced, revolutionizing the feeding process. Ice was critical not only for cold storage, but it was used for shipping eggs, fry, fingerlings and fish. Fish cans, which looked like large milk cans, were used to transport the stock on trains, wagons, and trucks. The cans were fitted with a perforated inset for holding ice, so that as the ice melted, it provided oxygen for the stock. Ice was cut from frozen ponds in the winter, brought to the hatchery, and packed in a room with one-foot walls insulated with sawdust. The insulated room is now replaced by a walk-in cooler that, in the mid-1940s, was added to the lean-to on the north side of the building. The 1948 biennial report states that the construction of a large walk-in cooler allowed the department to buy in large quantities when prices are down, and in Roxbury this policy has made a definite savings possible. At one time there was a second, small ice house and shed near the picnic area, demolished about 1954.

The ice, meat and cook house is a 1-1/2-story, 2 x 2 bay, gable-front, vernacular building facing west (the yard). A three-quarter-length lean-to, housing a walk-in freezer, is attached to the north eaves-side. This c. 1950 appendage replaces an original, full-length lean-to with parapet front that served as the main entrance to the building. The ice, meat and cook house is slightly elevated on a concrete foundation that appears to be a c. 1930 renovation. It has clapboard siding and a gable roof with a wide overhang and corrugated metal roofing with a brick ridge

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chimney. Architectural detail includes cornerboard trim and a wide, plain frieze. The facade is articulated with a 6/6 gable window and a vertical board, double-leaf door, flanked right by a horizontal-paneled pedestrian door. A photograph appearing in the 1896 Fish and Game Commission biennial report shows that the facade originally had 6/6 double-hung sash in the two first story bays with the existing window in the gable. The current pattern may date from c. 1950. Multi-paned fixed sash and double-hung 6/6 sash articulate the south and west elevations, respectively. The rear (west) elevation originally had a door for loading ice and no windows. The present sash appear to be the windows that originally articulated the east facade.

The interior of the ice, meat and cook house is open, used for storage and as a tool shed. The interior sawdust-insulated room is now removed, as is the cook stove, though the chimney remains in the attic.

3. Carriage barn, c. 1897

During the biennial term 1896 - 1898, a 28' x 30' barn was built with a lean-to on each side. A horse, harnesses, wagons, carts and sleds were purchased at the same time. The barn looks very much as it did in 1897 with minor modifications as the building was adapted to the automobile. The biennial report states that during 1937 and 1938 the C.C.C. installed a new truss rod in the garage to brace the top floor. Assuming that the report is referring to the carriage barn, the truss was probably added to counteract support lost when the stalls were removed, not an uncommon occurrence.

The vernacular, 1-1/2 story, 3 bay wide, gable-front carriage barn sits just to the north of the ice, meat and cook house (#2) on a concrete foundation facing west. Full-length lean-tos are attached to the north and south eaves-sides. The barn has clapboard siding and asphalt shingle roofing. Details include plain cornerboards and frieze. The 3 bay west facade has historic 3-part folding garage doors, dating from c. 1935, that replace an original sliding door in the left bay and two small square stanchion windows in the right bay. A hay loft door remains at the second

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story crowned with a 6/6 double-hung sash. The rear elevation has irregular 6/6 sash with plain surrounds and a drip cap.

The stalls are removed from the interior of the barn, which is now an open space, mostly used for storage, though a white-washed ceiling identifies the stall location. It is significant that six-by-six beams span the entire 28' width of the barn. Pre-1900 photographs of the hatchery show what appears to be a lumber mill across what is now Route 12A, where the beams must have been milled.

4. Ponds, 1912, c. 1940

The history of the ponds and water system is complex, because at Roxbury the system was continuously upgraded. The upgrades and alterations are generally described in the Department of Fish and Wildlife biennial reports. The most critical criteria for fish culture is an abundance of fresh water. In 1891, Roxbury was chosen as the site of the first state hatchery, in part, because of the property's abundant spring water supply. When the hatchery was established in 1891, four ponds were built that housed brood stock and served as rearing ponds. By 1894 eight ponds had been constructed, varying in size from 15 to 200 feet long, and in width from 10 to 30 feet. An 1896 photograph shows that the ponds were located directly in front of the hatchery building, so that the edge of the concrete deck front porch formed the sidewall of one of the ponds. Spring water was conducted to the ponds through plank flumes, which could be used for holding small trout, as well as for breeders to ascend when ready to spawn. These ponds were constructed so that each one could be drawn off and cleaned without interfering with the water supply of the others. In contrast, the current system of ponds is arranged in a linear pattern with water from the upper ponds flowing to the lower ponds, without an independent runoff. Inability to quarantine individual ponds leaves the present system less desirable. By 1895 the state obtained water rights from Burnham Brook (now Flint Brook), and water was carried to the ponds and hatchery in a plank flume and open ditch. In the summer, spring water was mixed with brook water to keep the ponds cool and healthy, and in the winter, the mixture of these waters kept the pools from freezing. By

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adding surface water with ground water, the system became an "open" system, in contrast to a "closed" system, which is strictly ground water. The downside of an "open" system is that surface water can hold contaminants not found in spring or well water; nevertheless, sufficient flowage is critical, and most fish culture stations do have an open system. During the summer of 1895, six ponds were enlarged and the School House Spring, mentioned in the 1890 deed (from Spaulding to the state), was laid in stone and concrete and connected with the main spring by 320 feet of two-inch galvanized iron pipe. By 1912 more appropriations led to several improvements, including installing larger pipes to conduct the water to the hatchery and pond system. A heavy stone and concrete dam was constructed on Burnham Brook with water diverted 1700 feet to the hatchery grounds through a 10-inch heavy iron pipe that gradually reduced to a six-inch pipe to increase pressure. The pipe replaced the open ditch and plank flumes previously in place. Ten reinforced concrete raceways, 6' wide by 40' long were constructed in 1912 just west of the hatchery building near the railroad tracks. No evidence remains of this series, and they were apparently buried. At the same time "two earthen ponds of irregular shape with solid reinforced [concrete] outlets" were also constructed. An examination of historic photos suggests that these ponds are Pond #1 and Pond #2, appearing on the attached site map, though the ponds were further developed in the following years. In addition there was a concrete raceway north of Pond #3, which is no longer extant. The 1931-1932 biennial report states that the five main ponds were rebuilt with new concrete headers and spillways installed, suggesting that the current system of five ponds was in place at that time. In 1937 the C.C.C. built a linear series of six raceways with a diversion channel, at the southern end of the series of ponds replacing earthen raceways that had been located there. The C.C.C. raceway is now used as a settling basin as water drains from the fish culture station into the Third Branch of the White River. It is interesting to note that evolution of water pipes included wood, iron, galvanized and PVC piping. Copper and lead, which were commonly used in residences, are toxic for fish. In the trough room, hatching trays (now plastic) and rearing troughs were traditionally painted with aluminum paint.

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Roxbury, Washington County, VT

The Roxbury Fish Culture Station has a linear series of five irregularly shaped ponds, dating from 1912, that terminate in an elongated series of concrete raceways, which were built in 1937 by the C.C.C. The dirt bottom ponds are numbered #1 through #5, north to south, with #1 closest to the source of water. In addition there are two fiberglass circular tanks west of Ponds #1 and #2 that were added c. 1970, and are non-contributing due to age. Ponds #1 and #2 are oval-shaped, with Pond #2 slightly larger, measuring approximately 50' wide by 120' long. Each has a concrete header and outlet. Pond #2 is protected on the west by a screen of pine trees creating a park-like setting. From Pond #2 the water is transported through a conduit under the drive to a small earthen raceway with a pellet feeding station for visitors. Next, the water flows into an approximately 25' x 35' concrete collection basin, from which the water is aerated as it falls through a concrete spillway, and into rectangular-shaped Pond #3, which is approximately 25' wide by 80' long. Pond #4 is smaller, egg-shaped with a concrete spillway leading to an elongated Pond #5, which stretches southward approximately 200'. The superintendent's house sat east of here, overlooking the pond, but was demolished c. 1970. At the southern end of the property, the water flows through the 1937, concrete, C.C.C. raceways and finally into the Third Branch of the White River.

5. Springhouse, c. 1960

The springhouse is non-contributing due to age. The 1892 biennial report states that when the hatchery was built in 1891, the main spring was enclosed in "solid masonry" (presumably concrete). The present structure dates from c. 1960. The spring produces 90 gallons of water per minute.

The approximately 30' by 40' springhouse sits on a concrete foundation with a broad gable roof that stretches nearly to the ground. Gable walls are open with wire stretched between wood support posts.

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6. Valve house, c. 1970

Non-contributing due to age. This approximately 3' square concrete structure with metal roofing protects the valves that regulate water intake from Flint Brook.

7. Barbecues, 1938

Fish culture stations have traditionally been the site of tourist activities. In 1938 the CCC built two stone barbecue grills on a bluff overlooking the hatchery. The stone for the barbecues was probably quarried at the site.

8. C.C.C. Barn, 1934-35

The C.C.C. was established in 1933 and was responsible for many of the upgrades at the Roxbury Fish Culture Station throughout the 1930s. This barn was built by the C.C.C. in 1934 or 1935. Sitting close to Route 12A, it now appears isolated, but when it was built it sat behind (south of) the superintendent's house and was logistically associated with that building. The biennial reports state that the barn was remodeled in 1940 to include storage space for supplies.

The vernacular, C.C.C. barn is a 1-1/2-story, approximately 35' by 45' gable-front barn set close to Vermont Route 12A, south of the hatchery building. Now used for storage, the structure sits on a concrete pier foundation, has vinyl siding covering the originals clapboards, and asphalt shingle roofing laid in a basket-weave pattern. The facade has three pairs of diagonal board, double leaf doors with canted framing. The trim is duplicated at the gable window. Windows at the sides and rear are now boarded.

9. Residential Trailer, c. 1970

The residential trailer is non-contributing due to age. In 1895 the state built a 10-roomed superintendent's house at the Roxbury

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hatchery. Due to rising maintenance and heating costs the house was demolished in 1970, replaced by this residential trailer.

10. State Biology Research Lab, c. 1960

The State Biology Research Lab is non-contributing due to age. Since 1950 there has been an expanding focus to protect wildlife habitat and insure the general health of fish and wildlife. This biology lab, which serves the central Vermont district, represents that trend. At fish culture stations, the broadened direction is manifest by the continuing research of fish disease and its treatment.

The State Biology Research Lab is a 4 by 2 bay, eaves-front, Ranch style building facing Route 12A (east), with the main entrance left of center protected by a gable-roofed, concrete deck entry porch. Slightly elevated on a concrete foundation the lab is built into a bank so that the front and south sides are 1 story, and the rear and north sides are 2 stories. There is a garage opening into the basement level on the south end. A secondary pedestrian entrance opens into the basement at the rear. The building has synthetic siding and asphalt shingle roofing. Windows are mostly 1/1 sash, some paired.

11. Shed, c. 1980

This shed is non-contributing due to age.

This utility shed is approximately 60' x 30', and is set well back and perpendicular to Route 12A, so that its eaves-front faces the biology lab (#10) (south). Set on a concrete foundation the shed has board and batten siding and corrugated metal roofing. The south elevation has two pairs of cross-braced, batten, exterior sliding doors. There is a pedestrian door on the east elevation.

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STATEMENT OF SIGNIFICANCE

The Roxbury Fish Culture Station is eligible for listing on the National Register of Historic Places under Criterion A for its contribution to the broad patterns of Vermont agricultural history within the historic context, "Fish Culture in Vermont, 1850 - 1943." Built in 1891, The Roxbury Fish Culture Station was the first state-operated fish culture station in Vermont. Before 1890, Vermont State Fish Commissioners purchased or obtained fish eggs from private or federal hatcheries, incubated the eggs, and reared the resultant fry for planting in Vermont lakes, streams and ponds. With increasing demands on fisheries and the escalating cost of fish eggs, the Vermont Legislature, in 1890, appropriated \$2,400 for building a state hatchery. Water, transportation and cost were the three criteria for choosing a site. The Roxbury site was chosen because it had abundant spring water, was located adjacent to the Central Vermont Railroad line, and Hon. E. H. Spaulding, who owned the property, was graciously willing to deed it to the state as a contribution. Following the initial wave of building at the station in the 1890s, the present system of ponds and raceways were built between 1912 and 1940. The C.C.C. worked at the hatchery (as the fish culture station was commonly called) from 1934 to 1940. They were responsible for rebuilding and upgrading the water system, renovating the interior of the hatchery building, building a storage barn, and building a picnic area for visitors. The Roxbury Fish Culture Station is also eligible for the National Register under Criterion C, for embodying the distinctive characteristics of a fish culture station. Included among the historic resources are the original hatchery building, built in 1891 and expanded in 1897; an ice, meat and cook house, built c. 1894; a carriage barn, built c. 1897; a series of five production ponds, established from 1912 to c. 1940; a storage barn, built by the C.C.C. in 1934-35; and two stone barbecues built by the C.C.C. in 1938. The Roxbury Fish Culture Station retains integrity of workmanship, setting, location, feeling, and association, and is being nominated to the National Register of Historic Places under the multiple property listing, "Fish Culture Resources of Vermont." The property meets the registration requirements for the property type, fish culture station.

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As early as 1819 Vermonters noticed that fish were getting smaller and that the population was decreasing, though they did not readily understand the causes. Early attempts to reverse the trend included stocking depleted waterways with fish transported from other locations. According to Samuel Swift's 1859 History of Middlebury, in 1819 a group of citizens from Middlebury, Salisbury, Leicester and Whiting journeyed to Lake Champlain and caught a quantity of several species of fish which they transported to Otter Creek in an effort to restore the stream. All species but one died, as they were ill suited for the stream environment.

Concern continued, and in 1856, the Vermont Legislature commissioned well-known Vermont naturalist, George Perkins Marsh, to investigate the decline of native fish. Marsh cited deforestation, erosion, chemical and agricultural waste and indiscriminate fishing practices as causes for the decline. To reverse the decline, he recommended that the causes must be addressed, and that the state should adopt a program of artificial fish propagation to revive fisheries.

It was not until 1866 that the Vermont Legislature acted on Marsh's recommendations, that year appointing Albert Hager and Charles Barret as the state's first Fish Commissioners. The commissioners joined New Hampshire, Connecticut, and Massachusetts in devising a plan to restore fish runs on the Connecticut and Merrimac Rivers. The plan included purchasing salmon eggs from Canada for propagation. In 1869 the commissioners made the first plant in Vermont, 2,500 land-locked salmon. Over the next twenty years, commissioners, sports clubs and private individuals incubated eggs and reared hatchlings for planting.

In the meantime, in 1871, the U.S. Government initiated a program for fishery conservation when Congress authorized the creation of the Commission of Fish and Fisheries. In 1872 the first federal hatchery was established in California, followed by one in Busksport, Maine. The earliest instance of Vermont commissioners receiving fish from the federal program was in 1873, when they were given 35,000 king salmon and large quantities of shad. The first federal hatchery in Vermont was established at St. Johnsbury

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in 1884, to raise trout and salmon for Vermont, New Hampshire and New York.

In 1872 the Commissioner of Fisheries, Middleten Goldsmith, again recommended that the state finance a fish hatchery for "sport and for sale to the public for food." The legislature rejected Goldsmith's request, but continued yearly allocations for purchasing eggs. In 1889, Commissioners Brainerd and Atherton made another strong recommendation to build a state hatchery. The commissioners stated that it would save the state money to produce fry under state supervision. The Legislature finally responded in 1890, by appropriating \$2,400 for the "erection and equipment of a fish hatchery," authorized by No. 57 of the Laws of Vermont (in 1890). Several sites were considered in St. Johnsbury, Brattleboro and Pittsford. The criteria was to find a location with an abundant, pure water supply, that was accessible to rail transportation, and that was affordable. The site selected was adjacent to the Central Vermont railway, on the property of Hon. E. H. Spaulding, about two miles south of Roxbury station. Through Mr. Spaulding's generosity the land, with numerous springs, was donated to the state.

In September 1891, construction began on the 28' by 55' hatchery building with an office and workroom (#1). Troughs and trays in the trough (or hatch) room could handle 1,500,000 trout eggs. The biennial report states that the "main spring was enclosed in solid masonry," presumably, concrete. Four small ponds were built of "solid masonry" and supplied with water from the main spring. From the main spring, a three-inch, cast-iron pipe was laid to conduct water 400' to the hatchery building. Two rearing troughs, 60' long by 4' feet wide by 3' feet high, were built for rearing fry. By the late fall 1891, the hatchery was ready for business. One thousand trout to be used as breeders were placed in the ponds. The first fry plants from the hatchery were made in the spring of 1892.

The Legislature in 1892 appropriated \$5,000 for completing and equipping the hatchery, which included building a 25' by 30' ice, meat and cook house (#2), and eight additional ponds. The ponds varied in size from 15' to 200' long, and in width from 10' to 30'. These were divided into 15 compartments. The water was

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conducted to them through plank flumes which could be used to hold small trout, as well as for breeders to ascend when ready to spawn. A photograph appearing in the 1894 biennial report shows the ponds immediately in front (north) of the hatchery building, so that the end of the concrete deck entry porch forms the wall of a pond.

The 1894 the Legislature appropriated \$7,000 for the state hatchery to purchase more property and build a 10-room house for the superintendent. The house was built in 1895, behind (south of) the hatchery building, on a slight rise, so that the attendant could look out over the hatchery yard. The house was demolished in 1970 due to rising heating and maintenance costs. In 1895, the State acquired all water rights to Burnham Brook (now Flint Brook). A dam was built on the brook, the water conveyed to the station in a plank flume and open ditch, and additional piping was laid to conduct the spring and brook water to the hatchery. During the summer of 1895 six ponds were enlarged, School House Spring, referred to in Burnham's deed to the state, was laid in stone and concrete and connected with the main spring by 320' of 2" galvanized iron pipe. In the fall of 1895 about one million eggs were taken from the parent brook, lake and rainbow trout. This was the first season in the history of the state hatchery that there was no expenditure for fish eggs.

During the biennial term, 1896 - 1898, a 28' by 30' barn was built with a lean-to on each side (#3). A horse, harnesses, wagons, carts and sleds were also purchased, as well as a gasoline motor with fixtures and cutters for grinding meat for fish food. Because the state had already outgrown the hatchery building, an addition of 30' was made at the south end. As the hatchery facility grew, there was a need for more water. In 1898 water rights and a change of course of Burnham Brook was purchased and changed on the property of Messrs. Kennedy and Bean.

The next wave of improvements began in 1912. An increased supply of water was obtained by building a new dam at Burnham Brook, making it necessary to put in a 10' iron pipe to conduct the water to the hatchery and pond system. This replaced an open ditch and plank flumes previously in place. Ten reinforced concrete raceways were built (no longer extant), and two irregularly-shaped

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earthen ponds with solid reinforced concrete outlets were also constructed (#4, Ponds 1 & 2). The hatchery building, which was originally built with wood floors, was raised out of the ground, placed on new sills, and the decaying floor was replaced by a solid concrete floor two feet lower than the original floor. By lowering the hatch room, water flowage was aided by gravity. Subsequent state hatcheries incorporated the sunken hatch room in their original design.

During 1910, 1911 and 1912 the State propagated brook, brown, rainbow, and lake trout, and landlocked and Chinook salmon. In 1912 Commissioner John Titcomb raised the question of instituting a fishing license for anglers. Up until this time revenue from hunting licenses, supplemented with legislative appropriations, was used for the protection of both fish and game. In 1915 an angler's license law was passed, but not without opposition. The Burlington Free Press on March 16, 1916, said a larger vote than had been expected was given for the new license, with the opposition coming from those who felt fishing was a God-given right, and those who feared that Fish and Game would have too much money. Rep. Stacy of Hartford wanted the revenue divided with schools. As it was, the enactment of the fishing license law and repeal of the biennial appropriation enabled the Fish and Game Commission the unique distinction of being the only state department wholly maintained without legislative appropriation.

By 1916 other fish culture and field stations had been established. The Roxbury hatchery became known as the central station, about which were grouped a series of field stations at Lyndon Center, Bennington, Vernon, White River Junction, Canaan and Burlington. While Roxbury was the principal state hatchery, in fact, larger distributions were being made from the stations at Bennington and Canaan which by 1930 graduated from field stations to become established state hatcheries. In 1931, a fourth hatchery was built as Salisbury. Roxbury continued to have problems maintaining water capacity. Diminished water prohibited the Roxbury station from operating at capacity.

As the economy was grinding to a halt in the 1930s, improvements continued at the Roxbury hatchery. The biennial report states that in 1932 the five main ponds were rebuilt with new concrete

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headers and spillways. This report suggests that the current system of ponds was probably in place at this time. In 1934-35, the C.C.C. built a storage barn (#8) behind (south of) the hatchery building, near the superintendent's house. In 1938, they poured a concrete series of raceways at the southern end of the property (#4). These raceways are mainly used as a settling basin, as the water flows into the Third Branch of the White River. The C.C.C. also renovated the interior of the hatchery building, adding toilets and a new heating system. On a bluff, overlooking the hatchery yard, they constructed two stone barbecues for visitors (#7).

As the country entered the war years, improvements and new building was halted because of lack of workers and materials. In 1960, the state added a biology research lab (#10) to the complex. While this building is non-contributing due to age, it is significant for representing an expanding focus of fish culture. From the 1850s through the 1930s, the primary focus has been on fish propagation and conservation of fisheries. From 1940 to the present, the focus has expanded to include the study and treatment of disease in fish. The biology lab is operated by the Department of Fish and Wildlife serving central Vermont.

Today the Roxbury Fish Culture Station, with its intact collection of historic buildings and earthen ponds, continues to operate as a hatchery. While critical water systems have been continuously improved, the historic buildings have been carefully preserved, making this station an excellent resource contributing to the understanding of Vermont's agricultural heritage, within the historic context, "Fish Culture in Vermont, 1850 - 1953." The period of historic significance is 1891 - 1943. Because this is an operating fish culture station, the daily activities add an invaluable context that can't be captured in words or photographs. Everywhere--is the smell and sound of water. The water transforms the station to make it alive. It defines, and it characterizes. It rushes and falls and gurgles and flows and drips, and sometimes, when a fish jumps, it plops. The Roxbury Fish Culture Station is open to visitors.

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BIBLIOGRAPHY

Written Sources:

Cousins, Ann and Elizabeth Pritchett. National Register of Historic Places Multiple Documentation Form, "Fish Culture Resources of Vermont". 1993. On file at the Vermont Division for Historic Preservation.

Gale, David Goodsell. "The History of the Vermont Fish and Game Commission, 1866 - 1960." Masters thesis, University of Vermont Archives. Burlington, Vermont. c. 1980.

Davis, George W. "History of Roxbury Hatchery: 1891 - 1956." Vermont Fish and Game Service, Montpelier, 1956.

Perry, Florence J. "Progress Report of the Vermont Fish and Game Department." Montpelier, Vermont, 1964.

Vermont Department of Fish and Game. Biennial Reports of the Commissioners of Fish and Game. Montpelier, 1867 - 1970.

Vermont Department of Fish and Wildlife. "The Vermont Management Plan for Brook, Brown and Rainbow Trout. (draft). Waterbury, Vermont, 1993.

Interviews

Barber, Ralph. Roxbury, Vermont. August, October, 1993.

Devold, Howard. Salisbury. Vermont. January 6. 1993.

Keir, Bob. Roxbury, Vermont. August, 1993.

Ray, Bill. Roxbury, Vermont. August, 1993

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GEOGRAPHICAL DATA:

Verbal Boundary Description:

The boundary of the Roxbury Fish Hatchery is indicated as
Parcel #44 on Map #9 of the Roxbury Tax Maps.

Boundary Justification:

The nominated property includes 7.93 acres deeded from Hon. E. N. Spaulding to the State of Vermont on August 1, 1891, recorded in Book 16 Pages 437-439 of the Roxbury Land Records.

Central Vermont Railroad

